In The Claims

1. (Currently amended) A medicament delivery method comprising;

(a) providing a delivery system comprising a delivery formulation comprising an effective amount of an inactivated bioactive peptide and an effective amount of a mucosal absorption enhancer comprising a quaternary ammonium salt for enhancing mucosal absorption of the peptide in the buccal cavity;

(b) bringing the delivery formulation into contact with the mucosal surface of the buccal cavity under conditions suitable to permit an effective amount of the peptide to be absorbed~~, wherein the quaternary ammonium salt is used at a final concentration of about 0.005 % and about 0.05 %, based on the weight of the formulation~~.

2. (Canceled)

3. (Previously presented) The method of claim 1 wherein the quaternary ammonium salt comprises benzalkonium chloride.

4. (Original) The method of claim 1 wherein the peptide comprises an ozone-inactivated toxin.

5. (Original) The method of claim 1 wherein the formulation is delivered by spraying to the roof of the mouth.

6. (Original) The method of claim 1 wherein the delivery system further comprises an aerosol actuator, for use in containing and spraying the delivery formulation.

7. (Previously presented) A delivery system comprising a dispenser containing a delivery formulation comprising an effective amount of an inactivated bioactive peptide and an effective amount of a mucosal absorption enhancer comprising a quaternary ammonium salt for enhancing mucosal absorption of the peptide in the buccal cavity, wherein

the quaternary ammonium salt is used at a final concentration of about 0.005 % and about 0.05 %, based on the weight of the formulation.

8. (Previously presented) The system of claim 7 wherein the dispenser is selected from the group consisting of aerosol and non-aerosol dispensers.

9. (Previously presented) A medicament delivery formulation comprising an effective amount of an inactivated bioactive peptide and an effective amount of a mucosal absorption enhancer comprising a quaternary ammonium salt for enhancing mucosal absorption of the peptide in the buccal cavity, wherein the quaternary ammonium salt is used at a final concentration of about 0.005 % and about 0.05 %, based on the weight of the formulation.

10. (Original) A combination comprising a delivery formulation according to claim 9 in contact with the mucosal membrane of the roof of the mouth.

11. (Previously presented) The method of claim 1 wherein the peptide has a molecular weight of at least 500 daltons.

12. (Previously presented) The method of claim 1 wherein the quaternary ammonium salt comprises a tetrasubstituted ammonium salt, in which the substituent groups comprise hydrocarbon compounds attached to the nitrogen by N-C bonds.

13 (Canceled)

14. (Canceled)

15. (Previously presented) The method of claim 1 wherein the bioactive peptide is inactivated by a method comprising the steps of treating the peptide with ozone under conditions suitable to oxidize any disulfide bonds in order to form corresponding pairs of cysteic acid residues, and then stabilizing the resultant cysteic acid residues and preventing the reformation of disulfide bonds.

16. (Previously presented) The method of claim 15 wherein the inactivated bioactive peptide retains one or more properties selected from the group consisting of immunogenicity and anti-viral activity.

17. (Previously presented) The method of claim 1 wherein the bioactive peptide is selected from the group consisting of toxins affecting the presynaptic neurojunction, toxins affecting the postsynaptic neurojunction, toxins affecting ion channels, and toxins that damage the cell membrane.

18. (Previously presented) The method of claim 17 wherein the toxins affecting the presynaptic neurojunction toxins are selected from the group consisting of notexin, ß-bungarotoxin, crotoxin, taipoxin, textilotoxin and α-latrotoxin.

19. (Previously presented) The method of claim 17 wherein the toxins affecting the postsynaptic neurojunction are selected from the group consisting of α-conotoxins, α-cobrotoxin, erabutoxin, α-cobratoxin and α-bungarotoxin.

20. (Previously presented) The method of claim 17 wherein the toxins affecting ion channels are selected from the group consisting of dendrotoxins, scorpion toxins, m-conotoxins, and sea anemone toxins.

21. (Previously presented) The method of claim 17 wherein the toxins that damage the cell membrane are membrane-damaging toxins selected from the group consisting of myotoxins, cardiotoxins, mellitin, and phospholipases.

22. (Previously presented) The method of claim 16 wherein the bioactive peptide is selected from the group consisting of protein hormones and enzymes.

23. (Previously presented) The method of claim 22 wherein the bioactive peptide is a protein hormone selected from the group consisting of oxytocin, arginine vasopressin, insulin, growth hormone and calcitonin.

24. (Previously presented) The method of claim 22 wherein the bioactive peptide is an enzyme selected from the group consisting of ribonuclease, lysozyme, chymotrypsin, trypsin, elastase, and papain.

25. (Previously presented) The method of claim 1 wherein the peptide is prepared by a method comprising the step of preparing a cDNA strand encoding the peptide.

26. (Previously presented) The method of claim 25 wherein the peptide is prepared by expressing the cDNA under conditions in which the peptide is recovered in an inactive form due to the failure to form one or more disulfide bridges.

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (Previously presented) The system of claim 7 wherein the quaternary ammonium salt comprises benzalkonium chloride.

31. (Previously presented) The system of claim 7 wherein the peptide has a molecular weight of at least 500 daltons.

32. (Previously presented) The system of claim 7 wherein the quaternary ammonium salt comprises a tetrasubstituted ammonium salt, in which the substituent groups comprise hydrocarbon compounds attached to the nitrogen by an N-C bond and are selected from substituted and unsubstituted, saturated and unsaturated, aliphatic and aromatic, branched and normal chain groups.

33. (Previously presented) The system of claim 7 wherein the quaternary ammonium salt is used at a final concentration of between about 0.001 % and about 0.1 % based on the weight of the formulation.

34. (Previously presented) The system of claim 33 wherein the quaternary ammonium salt is used at a final concentration of about 0.005 % and about 0.05 %, based on the weight of the formulation.

35. (Previously presented) The system of claim 7 wherein the bioactive peptide is inactivated by a method comprising the steps of treating the peptide with ozone under conditions suitable to oxidize any disulfide bonds in order to form corresponding pairs of cysteic acid residues, and then stabilizing the resultant cysteic acid residues and preventing the reformation of disulfide bonds.

36. (Previously presented) The system of claim 35 wherein the inactivated bioactive peptide retains one or more properties selected from the group consisting of immunogenicity and anti-viral activity.

37. (Previously presented) The system of claim 7 wherein the bioactive peptide is selected from the group consisting of toxins affecting the presynaptic neurojunction, toxins affecting the postsynaptic neurojunction, toxins affecting ion channels, and toxins that damage the cell membrane.

38. (Previously presented) The system of claim 37 wherein the toxins affecting the presynaptic neurojunction toxins are selected from the group consisting of notexin, ß-bungarotoxin, crotoxin, taipoxin, textilotoxin and α-latrotoxin.

39. (Previously presented) The system of claim 37 wherein the toxins affecting the postsynaptic neurojunction are selected from the group consisting of α-conotoxins, α-cobrotoxin, erabutoxin, α-cobratoxin and α-bungarotoxin.

40. (Previously presented) The system of claim 37 wherein the toxins affecting ion channels are selected from the group consisting of dendrotoxins, scorpion toxins, m-conotoxins, and sea anemone toxins.

41. (Previously presented) The system of claim 37 wherein the toxins that damage the cell membrane are membrane-damaging toxins selected from the group consisting of myotoxins, cardiotoxins, mellitin, and phospholipases.

42. (Previously presented) The system of claim 36 wherein the bioactive peptide is selected from the group consisting of protein hormones and enzymes.

43. (Canceled)

44. (Canceled)

45. (Previously presented) The system of claim 7 wherein the peptide is prepared by a method comprising the step of preparing a cDNA strand encoding the peptide.

46. (Previously presented) The system of claim 45 wherein the peptide is prepared by expressing the cDNA under conditions in which the peptide is recovered in an inactive form due to the failure to form one or more disulfide bridges.

47. (Canceled)

48. (Canceled)

49. (Canceled)

50. (Previously presented) The formulation of claim 9 wherein the quaternary ammonium salt comprises benzalkonium chloride.

51. (Previously presented) The formulation of claim 9 wherein the formulation is adapted to be delivered by spraying to the roof of the mouth.

52. (Previously presented) The formulation of claim 9 wherein the quaternary ammonium salt comprises a tetrasubstituted ammonium salt, in which the substituent groups comprise hydrocarbon compounds attached to the nitrogen by an N-C bond and are selected from substituted and unsubstituted, saturated and unsaturated, aliphatic and aromatic, branched and normal chain groups.

53. (Canceled)

54. (Canceled)

55. (Previously presented) The formulation of claim 9 wherein the bioactive peptide is inactivated by a method comprising the steps of treating the peptide with ozone under conditions suitable to oxidize any disulfide bonds in order to form corresponding pairs of cysteic acid residues, and then stabilizing the resultant cysteic acid residues and preventing the reformation of disulfide bonds.

56. (Previously presented) The formulation of claim 55 wherein the inactivated bioactive peptide retains one or more properties selected from the group consisting of immunogenicity and anti-viral activity.

57. (Previously presented) The formulation of claim 9 wherein the bioactive peptide is selected from the group consisting of toxins affecting the presynaptic neurojunction, toxins affecting the postsynaptic neurojunction, toxins affecting ion channels, and toxins that damage the cell membrane.

58. (Previously presented) The formulation of claim 57 wherein the toxins affecting the presynaptic neurojunction toxins are selected from the group consisting of notexin, ß-bungarotoxin, crotoxin, taipoxin, textilotoxin and α-latrotoxin.

59. (Previously presented) The formulation of claim 57 wherein the toxins affecting the postsynaptic neurojunction are selected from the group consisting of α-conotoxins, α-cobrotoxin, erabutoxin, α-cobratoxin and α-bungarotoxin.

60. (Previously presented) The formulation of claim 57 wherein the toxins affecting ion channels are selected from the group consisting of dendrotoxins, scorpion toxins, m-conotoxins, and sea anemone toxins.

61. (Previously presented) The formulation of claim 57 wherein the toxins that damage the cell membrane are membrane-damaging toxins selected from the group consisting of myotoxins, cardiotoxins, mellitin, and phospholipases.

62. (Previously presented) The formulation of claim 56 wherein the bioactive peptide is selected from the group consisting of protein hormones and enzymes.

63. (Previously presented) The formulation of claim 62 wherein the bioactive peptide is a protein hormone selected from the group consisting of oxytocin, arginine vasopressin, insulin, growth hormone and calcitonin.

64. (Previously presented) The formulation of claim 62 wherein the bioactive peptide is an enzyme selected from the group consisting of ribonuclease, lysozyme, chymotrypsin, trypsin, elastase, and papain.

65. (Previously presented) The formulation of claim 9 wherein the peptide is prepared by a method comprising the step of preparing a cDNA strand encoding the peptide.

66. (Previously presented) The formulation of claim 65 wherein the peptide is prepared by expressing the cDNA under conditions in which the peptide is recovered in an inactive form due to the failure to form one or more disulfide bridges.

67. (Canceled)

68. (Canceled)

69. (Canceled)